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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

HU, SHOUXIANG

ART UNIT	PAPER NUMBER
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2811

DATE MAILED: 09/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/666,605

Applicant(s)

DEN ET AL.

Examiner

Shouxiang Hu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) 11,22,23 and 25-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-10,12-21,24 and 46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Claims 26-45 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

1. Applicant's election with traverse of claims 1-9, 12-20 and 46 in Paper No. 11 is acknowledged. The traversal is on the ground(s) that: the identified four species are believed to be "reasonable" and further (they) are not believed to be unduly burdensome on the Examiner. This is not found persuasive as explained below.

The identified four species contain substantially distinctive subject matters. For examples, Species 3 involves a light emitting filling material, which has no substantial correlation with other species in terms of similarities in materials and functionalities. Each of the species requires thorough searching and examining on the subject matters of nano-pore structures through anodizing and other non-anodization means, which in turn requires thorough search of class of 257/3, 9, 13, 14, 531, and 778, and class 438/3, 108, 381, 399, 408, 409 and 667, along with class 205/105, 121, 173, 174, 202 and 207. For the individual species, such as species II further requires thorough search of class 360/324, 324.1, 324.2, 324.11, 324.12 and 326, and class 365/158, 129, 171, 173 and 159; Species 3 further requires thorough search of class 257/79-103; and so on.

Because these inventions are substantially distinct and have acquired addition and/or separate status in the art as shown by their different classification, and substantial burden would be imposed on the Examiner if each of the species had to be searched and examined, thus restriction for examination purposes as indicated is proper.

Nevertheless, Species I and II are examined together in this Office action, in order to better satisfy applicant's interest.

2. Accordingly, claims 1-46 are pending in this application; and claims 1-10, 12-21, 24 and 46 remain active in this Office action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 7, 9, 18, 19 and 20, insofar as being supported by the elected species, are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The subject matter of filling one material in the pore(s) above the conductive layer and filling a different material in the pore(s) above the nonconductive region is critical or essential to the practice of the invention, but is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The specification and drawings (esp., Fig. 7C) fail to adequately disclose what is the other filling material for

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the pore(s) above the nonconductive region, and what is the purpose or function of that other filling material, in the embodiment of the elected Species I (which has a conductive filling material above the conductive layer) and/or in the embodiment of Species II (which has a magnetic filling material above the conductive layer).

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 46 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 46 recite twice the term of "a surface of the substrate", but fails to clarify what is the correlation between the two surfaces of the substrate.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily

published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claim 46 is rejected under 35 U.S.C. 102(e) as being anticipated by Wegrowe et al. ("Wegrowe"; 6,172,902).

Wegrowe discloses a structure having pores (Figs. 4 and 5B), comprising: a substrate (20); and a patterned electrically conductive layer (3b); a layer of aluminum oxide (2; see col. 6, lines 8-15) with pores therein; wherein the pores are disposed above the electrically conductive layer and are inherently above the surface of the substrate; and the surface region of the conductive layer (3b) inherently provides an electrical path between the conductive layer and the bottom of the pores above the conductive layer.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-10, 12-21 and 24, insofar as being in compliance with 35 U.S.C. 112, are rejected under 35 U.S.C. 103(a) as being unpatentable over JP11-200090 (of record) in view of Wegrowe et al. ("Wegrowe"; 6,172,902).

The structure having pores in JP11-200090 (see Figs. 6(a) , 7(a) and 7(b)) differs from the claimed structure in the instant invention in that the electrically conductive layer

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(11) in the structure in JP11-200090 is not patterned. However, one of ordinary skill in the art would readily recognize that the electrically conductive layer needs to be patterned and arranged between non-conductive regions in order to form individual functional components in an integrated circuit, as evidenced in Wegrowe, whose disclosure is discussed as applied to claim 36 above.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the structure of JP11-200090 with the electrically conductive layer being patterned into individual areas, so that individual functional components in an integrated circuit would be obtained.

Regarding claims 4 and 15, it is noted that one of ordinary skill in the art would readily recognize that the substrate can also be made of a conductive layer underlying an insulating layer (as evidenced in the prior art such as 6,194,255, see col. 3, lines 12-15).

Regarding claims 7, 9, 18, 19 and 20, is noted that, with the method forming the conductive or magnetic filling in the both JP11-200090 and Wegrowe, only the the pores above the conductive layer would be filled with the conductive or magnetic filling material.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reference B is cited as being related to a conductive substrate.

12. Papers related to this application may be submitted to Technology center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the TC 2800 Fax center located in Crystal Plaza 4, room 4-C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 2811 Fax Center number is (703) 308-7722 or 308-7724. The Group 2811 Fax Center is to be used only for papers related to Group 2811 applications.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Shouxiang Hu** whose telephone number is **(703) 306-5729**. The examiner can normally be reached on Monday through Thursday from 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Tom Thomas**, can be reached on **(703) 308-2772**. The appropriate fax phone number for the organization where this application or proceeding is assigned is **(703) 308-7724**.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Technology Center Receptionists** whose telephone number is **(703) 308-0956**.



Shouxiang Hu

September 7, 2002